

WHAT IS CLAIMED IS:

1. A method for assembling a motor to facilitate reducing vibrational noise generated as a result of a rotor assembly contacting a bearing assembly, the motor including at least one bearing assembly and at least one washer assembly, the rotor assembly including a rotor shaft, the washer assembly including a snap ring and a damping washer, said method comprising the steps of:

providing a damping washer including a plurality of layers including at least one layer fabricated from an energy-absorbing material;

inserting the rotor shaft through the washer assembly such that the damping washer is between the snap ring and the bearing assembly; and

supporting the rotor shaft within the motor with each bearing assembly such that each damping washer is adjacent each bearing assembly.

2. A method in accordance with Claim 1 wherein said step of providing a damping washer further comprises the step of providing a damping washer including a first semi-rigid layer, a second resilient layer and a third semi-rigid layer, the first layer identical with the third layer.

3. A method in accordance with Claim 2 wherein said step of inserting a rotor shaft further comprises the step of positioning the damping washer such that at least one of the damping washer first layer and damping washer third layer is adjacent the snap ring.

4. A method in accordance with Claim 2 wherein said step of inserting a rotor shaft further comprises the step of positioning the damping washer such that at least one of the damping washer first layer and damping washer third layer is adjacent the thrust bearing.

5. A method in accordance with Claim 2 wherein said step of providing a damping washer further comprises the step of providing a damping

washer including a first and third layer fabricated from a wear-resistant material, and a second layer fabricated from an oil-resistant material, such that the first and third layers are each bonded to the second layer.

6. A motor comprising:

5 a motor housing comprising an end cap and a can, said end cap connected to said can and comprising an opening, said can comprising an opening;

a stator assembly positioned within said motor housing and comprising a stator core and a stator bore extending therethrough, said stator core comprising a plurality of stator windings;

10 a rotor assembly positioned within said stator bore, said rotor assembly comprising a rotor core, a rotor bore disposed through said rotor core, and a rotor shaft extending through said rotor bore, said end cap opening, and said can opening;

a bearing positioned on said rotor shaft adjacent said end cap; and

15 a washer comprising a first layer, a second layer and a third layer, said second layer different from said first and third layers, said washer positioned on said rotor shaft adjacent said bearing and configured to dampen vibrations induced from said rotor shaft.

7. A motor in accordance with Claim 6 further comprising a snap ring affixed to said shaft, said washer adjacent said snap ring.

20 8. A motor in accordance with Claim 6 wherein said washer first and third layers identical and fabricated from a semi-rigid material, said washer second layer fabricated from a resilient material and between said washer first and third layers.

25 9. A motor in accordance with Claim 6 wherein said first, second, and third layers are bonded together.

10. A motor in accordance with Claim 6 wherein said washer first and third layers comprise an oil-resistant material, said second layer comprises an energy-absorbing material.

5 11. A motor in accordance with Claim 6 wherein said washer second layer comprises material selected from the group consisting of foam and rubber.

12. A motor in accordance with Claim 6 wherein said washer first and third layers comprise wear resistant material.

10 13. A motor in accordance with Claim 12 wherein said washer first and third layers comprise material selected from the group consisting of fiber, phenolic plastics, and nylon.

14. A washer assembly for a motor, the motor including an end cap and a rotor shaft including a bearing thereon, said washer assembly configured to reduce vibrational stresses induced from the rotor shaft, said washer assembly comprising:

15 a damping washer comprising a first layer, a second layer and a third layer; said second layer different from said first and third layers; and

a snap ring adjacent said damping washer.

20 15. An assembly in accordance with Claim 14 wherein said damping washer first and third layers fabricated from a semi-rigid material, said damping washer second layer fabricated from a resilient material.

16. An assembly in accordance with Claim 14 wherein said damping washer second layer between said damping washer first and third layers, said washer assembly positioned on the rotor shaft adjacent the bearing.

25 17. An assembly in accordance with Claim 14 wherein said damping washer second layer comprises an oil-resistant and energy-absorbing material, said

first and third layers comprise a wear resistant material, said first layer identical with said third layer.

- 5           18. An assembly in accordance with Claim 14 wherein said second layer comprises a material selected from the group consisting of foam and rubber, said first and third layers comprise a material selected from the group consisting of fiber, phenolic plastics, and nylon.

03-LO-6803